digital
INFOSHARE
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Networking the Navajo Nation

The Navajo Tribal Utility Authority has been providing utility services to the Navajo Nation for more than 35 years. Rare among rural utility companies, the Authority currently offers a selection of five utilities including electricity, natural gas, water, waste water treatment and most recently photovoltaic (solar) power. With the variety of services and a customer base of 34,000 and growing, the Authority recognizes the need to use technology to continuously improve communications. Who could help them ensure consistent quality service to a whole nation? Digital Network Services accepted the challenge.

Why Digital?

After more than 10 years of solid computer service experience with Account Representative Anthony Chavez, and his teammates Emma Stoll and Jon Bell, **the Authority trusted the Digital Service Delivery team in Albuquerque, NM. For the Authority, Digital was the logical choice.** We offered network expertise through known service personnel with proven track records. Alan Weingarten and Steve Torrez were eager to help the Authority plan a Wide Area Network linking seven district offices to the Authority headquarters in Fort Defiance, AZ. Digital understood the importance of the Authority's vision of connectivity for their business partner and clientele, the entire Navajo Nation. The network connection would facilitate the Authority's record keeping, billing and service delivery throughout the vast 27,000 square mile territory.

The remoteness of the Navajo Nation presented a major challenge for network planners. Some Authority sites did not have adequate telephone circuits to provide high-speed data links. How could that inadequacy be overcome? Digital proposed that the Authority use their recently installed microwave radio network. By using the microwave the Authority would have an independent data link to their offices: they could be sure of a solid data path. Mr. Teddy Nez, the Authority's Systems Supervisor received this proposal enthusiastically. It allowed his remote sites instant access to the records in Fort Defiance. In addition, it provided the Authority a stepped approach for moving to a wide area network with Ethernet connectivity at the remote sites. Previously, the Authority depended on asynchronous connections to Fort Defiance. Since such connections are less than 100% reliable, the Authority risked missing customer communications. That risk was unacceptable.

What's connected?

The Ethernet connections to outlying offices are now complete. The main VAX is connected to surrounding local buildings through fiber optic backbone and extended via microwave channel. At each site, a terminal server is tied into a thin wire backbone. More than 200 PCs, terminals, servers and printers now reside at the remote sites scattered throughout the Nation in Arizona, New Mexico and Utah. Each piece of equipment is connected to Fort Defiance headquarters. Already, according to Authority General Manager Mickey Dalton, "the network has given us the best internal communications on the reservation."

Two other major players in the Authority's network provide financial and billing software applications. Cooperative Services Inc. of Santa Fe, NM created Envision software which handles the Authority's database and automated billing system on the VAX. This vendor works closely with the Authority's own support and development staff.

Landis & Gyr of San Jose, CA authored the Supervisory Control and Data Acquisition System. With current on-site training, geographic diagramming and configuration, Dalton views full implementation this summer as the realization of the vision he brought to the Authority in 1972. "This state-of-the-art system," explains Dalton "allows us to engage in hourly purchases of electricity and natural gas and will result in keeping the commodity costs as low as possible for our customers.

TOP: Window Rock, Arizona
LEFT: Leading edge technology meets proud tradition.

see **Networking,** *page 3*

NETWORKS

Peter Hussey was recently named vice president of Network Services for the Americas, a new business group within Multivendor Customer Services. Peter talked with *INFOSHARE* about Digital's portfolio of integrated services for helping customers design, implement, and manage today's complex multivendor networks.

INFOSHARE: Digital has been servicing customers' networks for years. What is new and different today?

Hussey: We've combined all our technical skills in network design, implementation, migration, and management—for the desktop and beyond—into a dynamic business segment that's truly global and truly multivendor. This will make it easier for us to respond quickly and cost-effectively to customer needs—and to help customers take full advantage of rapidly changing technologies. As an integral part of Multivendor Customer Services, we can deliver a full complement of vendor-neutral offerings.

INFOSHARE: Why is being vendor-neutral significant? What does that mean to customers?

Hussey: Network managers today are faced with a vast number of technology solutions from an ever-widening array of vendors. They need broad-based network integration services that are not limited to a single vendor's products. **Being vendor-neutral means our Network Services consultants look at functionality and customer preference, and not the name on the box.** In fact, we can work with virtually any product or company to deliver high-quality network services. We'll do whatever it takes to meet customer requirements for price, performance, capacity, reliability, and interoperability—without vendor bias.

INFOSHARE: What will the focus of Network Services be?

Hussey: Our customers are either already in client/server environments or they're moving into the client/server world. We will focus on supporting these environments with appropriate network design, implementation, transition, and network operating system migration and extensions.

INFOSHARE: What are Digital's credentials in this arena?

Hussey: Digital has always led the industry in its depth of networking experience, and now our service skills are concentrated in a single business unit that has already, through awards and surveys, shown that no one in the industry is more experienced or better equipped to support this environment. For example, we were the first recipient of *Infoworld Magazine*'s annual award for Best Client/Server Technical Support, based on a poll of their 225,000 readers.

INFOSHARE: What does Digital offer?

Hussey: We offer a full range of services: network design, project management and implementation, network management services. We can provide experienced consultants and project managers to oversee the most complex networking projects. This includes PC integration, LANs, and WANs. We can handle all or any part of a project—on a local, national, or multinational basis.

INFOSHARE: What new services or capabilities does Digital offer?

Hussey: We have new services to get customers up-and-running quickly and cost-effectively on the Internet, to help them learn how to put the Internet to work for them, and to take full advantage of the Internet to expand their market reach. We can consult on and support ATM and FDDI technologies. We offer a system "health check" and can give customers an in-depth assessment of their system with recommendations for improvement. We have a total desktop solution—the PC Utility—that includes comprehensive network services.

INFOSHARE: In today's complex world, it's rare that a company can "do it all." Yet that sounds like what you're saying about Network Services.

Hussey: Digital is ideally positioned to provide a broad range of high-caliber services through an unique combination of internal and external resources. In addition to our own worldwide staff of skilled and experienced Network Services technicians, project managers, and consultants, we have strong partnerships and alliances with equipment manufacturers, telecommunications service providers, software companies, industry consultants, systems integrators, and applications providers, among others. Partnering is a key part of our strategy, so you will find that while we're prepared to take the lead role in complex network solutions, we will team with the best partners to deliver what's needed.

INFOSHARE: How does Network Services work? How would customers engage these services?

Hussey: Network Services can work directly with customers through their Digital sales representative, their Digital business partner, or through our Network Solution Centers throughout the world. For more information use the Feedback form on page 11.

ANSWERS not excuses

PC Utility receives "Innovations in Service" Award

Len Bizzarro accepts award for PC Utility Service.

PC Utility, a complete desktop management service from Digital Equipment Corporation, was awarded the 1995 Harold H. Short, Jr. Innovations in Service Award by *Service News*.

The award, recognizing creativity in the computer industry, was presented to Len Bizzarro, Digital Vice President for Multivendor Customer Service Marketing for the Americas at Servcon '95 in Tucson, Arizona this spring.

For you, our customers, PC Utility is a compelling answer to the high cost of PC ownership. PC Utility delivers, supports and manages PC environments in the most comprehensive way. Everything from hardware and software procurement to support and training can be included for a single monthly service fee per desktop. **Unique to PC Utility is the technology refresh offering for both hardware and software which allows you to keep current with changing technology** that may better meet your evolving needs. Digital will work with you throughout the life-cycle of your desktop environment to provide you with a cost-effective solution to your desktop needs. According to *Service News* editor, Alison Harris, "PC Utility was selected by *Service News* editorial advisors, a diverse mix of corporate support and industry analysts. The board evaluates each entry on its innovative qualities, its ability to improve service delivery and its industry impact. The Short Award selects the single best service product in the industry for this unique distinction." ▮

Digital's PC servicenter™ alive and well!

São Paulo, Brazil's recently-opened PC SERVICenter

Digital's Multivendor Customer Services is pleased to offer you more service options for your business or home computing needs. How? We have full service locations across the US, Canada, Mexico, Brazil and more in other countries around the globe.

You may not realize that we provide total desktop computing support needs locally. Our SERVICenters offer quick, reliable service for the other vendor PCs you use at work and in your home. At these locations we've enhanced our traditional hardware service to include pick-up and delivery—should you want this added convenience.

Often, contract customers express surprise at the level of support provided through our SERVICenters, such as data recovery, file backup, virus and PC well checks. SERVICenters usually have memory upgrades and supplies in stock too. We offer solutions to assist you in design, setup, installation and upgrades.

We're committed to providing you with prompt quality service for most major products whether we sell them or not.

Call toll-free 1-800-332-8012 to find the SERVICenter location nearest you. You will reach a Digital service representative who—using your zip/postal code—will provide you the address and phone number of the SERVICenter nearest you. ▮

Networking, *continued from page 1*

Thanks to the network, we can now accurately predict customer requirements and buy power on the commercial market at substantial savings." Also, the Authority's network is a model for other tribal agencies. For example, the Human Services Department sees the benefits of networking and is following the Authority's lead in implementing a wide area network to facilitate servicing Navajo Nation clients.

The future of this network is bright—the communication it's facilitated has helped bring needed services to remote locations with speed and dependability. The Navajo Tribal Utility Authority is proud to demonstrate leadership in network accessibility for the sovereign Navajo Nation. ▮

TECH TIPS

Expert service teams at our Customer Support Centers work with you daily by phone on system enhancements, concerns and problems. At your suggestion they share some helpful technical tips from their work in OpenVMS™, ULTRIX™, Digital UNIX™, PATHWORKS™ and Networks.

OpenVMS

VMS disk autoshare does not appear

OpenVMS VAX, V5.5-2, 6.0
OpenVMS AXP, V1.5

Problem: After starting the PATHWORKS V5 server, the disk DKA0 is not offered as a hidden autoshare.

Solution: Check the disk volume name.

```
$sh dev dka0
```

If the volume name is longer than 10 characters, the drive will not be offered as an autoshare by default.

To add the drive as an autoshare, edit the PWRK$LMROOT:[LANMAN]lanman.ini file and go to [VMSSERVER] section. Modify the AUTOSHARE= line to include the device name and share name.

Example:

```
AUTOSHARE=DKA0=Z
```

If the server is in a cluster you must use the node name in the definition of the autoshare.

Example:

```
AUTOSHARE=FOOBAR$DKA0=Z
```

After the file server has been stopped and restarted, Z$ will appear as an autoshare.

NOTE: PATHWORKS V5 for OpenVMS (LAN Manager), Server Administrator's Guide, Section 5 gives a complete description of Shared Disk Devices. ▮

NETWORKS

How To Password Protect LAT Services

OP/SYS: OpenVMS VAX V5.5-2, V6.0, V6.1
OpenVMS AXP V6.1

If you have an application service on OpenVMS that you want to password protect, do this:

```
LATCP> CREATE SERVICE my_svc /APPLICATION
LATCP> SET SERVICE my_svc /PASSWORD=xyzzy
LATCP> CREATE PORT LTA1234 /DEDIC
LATCP> SET PORT LTA1234 /SERVICE =my_svc
```

For a dedicated port, it doesn't matter what you set for /NODE or /PORT (or /PASSWORD). LTDRIVER only looks at the /SERVICE field. Dedicated ports make no outgoing connects, they are only matched for incoming connects.

Since a non-null password string is set on the service, LATACP will validate any service connects to find a password. If not, it will reject the connection appropriately.

LAT service password protection may function in OpenVMS VAX V5.5-2 but it may not be documented. It is fully supported and documented in OpenVMS VAX V6.1 and OpenVMS AXP™ V6.1.

NOTE: General services can also take advantage of password protection in the same manner as application services. For example:

```
LATCP> CREATE SERVICE node_svc
LATCP> SET SERVICE node_svc /PASSWORD=xyzyx
```
▮

PATHWORKS

Upgrading to PATHWORKS V5: Why and How

Version information:

Information Applies To: PATHWORKS for OpenVMS v5 (LAN Manager) OpenVMS VAX Version 5.5-2 and 6.0, AXP Version 1.5

Why Upgrade?

The PATHWORKS for OpenVMS server has moved to a full industry standard LAN Manager V2.2 implementation. In addition, this LAN Manager server is the first network operating system (NOS) technology offered as part of the new PATHWORKS integrated NOS server architecture. This architecture sets the foundation for future integration of additional NOS types (Novell® NetWare® and Appleshare® from Apple).

PATHWORKS V5 provides migration tools to make the transition from V4 to V5 as smooth as possible. The tools include a server-based migration utility, step-by-step migration guide and four course offerings on migration. They will allow you to introduce the new functionality of PATHWORKS V5 with minimal interruption to your existing V4.x network.

PATHWORKS V4.X Support Strategy

For the PATHWORKS for DOS V4.x client software product, support was discontinued in January 1995. For the PATHWORKS for OpenVMS V4.x server software product, support will be discontinued in December 1995.

After retirement, Digital continues to provide telephone support on a 15-minute best effort basis for the PATHWORKS V4.x products through our Customer Support Centers. Full support (telephone and problem escalations) will be provided on the PATHWORKS V5.x family of products, but will not be available for PATHWORKS V4.x family of products. ▮

ULTRIX & DIGITAL UNIX

How to make a bootable copy

This is a very helpful preventive measure particularly in a production system where 100% uptime is critical. Should your system disk go bad or the root filesystem become corrupted, you can boot your system from the copy. Caution: You must have a spare disk drive large enough to hold your current root, swap, and usr partitions. To accommodate procedural differences under the ULTRIX and Digital UNIX operating systems and with the UFS filesystems, variations are explained under each instruction number. In all examples, rz0 is the current system disk, and rz2 is the spare drive where we make the bootable copy. Both are RZ28 drives. Also, both current system disk and copy use the default system disk layout:

```
/ on a
swap on b
/usr on g
```

1) First, ensure the spare disk is not in use. If you 'more' the /etc/fstab file, you will see the partitions currently used.

```
# more /etc/fstab
```

ULTRIX UFS:

1a) The fstab file does not contain the primary swap location.

Determine primary swap location by grepping the configuration file.

```
# grep config
/sys/conf/mips/HOSTNAME
```

NOTE: Replace HOSTNAME with your system's name in all caps.

Also, if your system is a VAX, the file location will be: /sys/conf/vax

Digital UNIX UFS:

With systems using AdvFS and/or LSM, do the following to see the partitions/disks currently in use:

```
AdvFS:  # ls -lR /etc/fdmns
LSM:  # voldisk list
```

1a) Write the disklabel to the spare drive, if not currently there. This puts the primary and secondary boot files at block 0.

```
# disklabel -r -w rz2 rz28
```

Both:

2) Create a UFS filesystem on the a and g partitions of the spare drive.

```
# newfs /dev/rrz2a rz28
# newfs /dev/rrz2g rz28
```

3) Mount the newroot partition temporarily to /mnt after verifying the new filesystems' consistency.

```
# fsck /dev/rrz2a
# mount /dev/rz2a /mnt
```

4) Copy the original root partition to the newroot.

```
# dump 0f - / | (cd /mnt; restore xf -)
```

Digital UNIX UFS:

4a) When the dump is complete, edit the /mnt/etc/fstab file to indicate the new root entry and to make the changes for swap and new usr for completion in later steps. Simply substitute all rz0 with rz2.

```
# vi /mnt/etc/fstab
1,$s/rz0/rz2/g
```

4b) Search in /mnt/sbin for a swapdefault file. If it exists, remove it and re-create it to point to the new swap location.

```
# ls -l /mnt/sbin/swapdefault
lrwxrwxrwx 1 root system 11
Aug 31 14:31 swapdefault ->../dev/rz0b
# cd /mnt/sbin
# rm swapdefault
# ln -s ../dev/rz2b swapdefault
```

ULTRIX UFS:

4a) Now rebuild the kernel to copy over to the newroot on /mnt.

```
# cd /sys/conf/mips
(/sys/conf/vax if your system is a VAX)
# ls
```

Files displayed show your system filename in all caps. Copy this file. Then edit the original replacing all rz0 with rz2 on the config line.

Example:

```
config vmunix root on rz0a swap on rz0b
```

change to:

```
config vmunix root on rz2a swap on rz2b
# cp HOSTNAME HOSTNAME.sav
# vi HOSTNAME
```

Rebuild the kernel:

```
# doconfig -c HOSTNAME
```

Next, move the new kernel to the alternate root partition and restore the original configuration file. Do NOT touch the kernel (/vmunix) on the normal root partition.

```
# mv
/sys/MIPS/HOSTNAME/vmunix
/mnt/vmunix
(/sys/VAX/HOSTNAME/vmunix if system is a VAX)
# cp HOSTNAME.sav HOSTNAME
```

4b) Modify the fstab file on the newroot, mounting root and usr partitions from the spare drive.

```
# vi /mnt/etc/fstab
```

Replace rz0 with rz2.

Both:

5) Now unmount the newroot partition and perform a filesystem check.

```
# umount /dev/rz2a
# fsck /dev/rrz2a
```

6) Verify the new filesystems' consistency. Mount the newusr partition temporarily to /mnt.

```
# fsck /dev/rrz2g
# mount /dev/rz2g /mnt
```

7) Copy the original /usr partition to the newusr.

```
# dump 0f - /usr | (cd /mnt; restore xf -)
```

8) Now unmount the newusr partition and perform a filesystem check.

```
# umount /dev/rz2g
# fsck /dev/rrz2g
```

9) Finally, shutdown your system and reboot it from the copied system disk for verification. The boot command is dependent on your hardware. Variation for Digital UNIX, AdvFS filesystems is not included due to space limitations. Find it in the DSNlink OSF database. ▮

Digital UNIX name emphasizes openness.

Digital is changing the name of its DEC OSF/1 operating system to *Digital UNIX*. The company has received a license to use the UNIX trademark in the product name under a new X/Open branding program. "COGNOS heartily applauds the Digital UNIX decision. This name more appropriately highlights the tremendous job Digital has done in providing a truly open operating system on a truly open platform." Ron Zambonini, president, Cognos, Inc., Ottawa, Ontario, Canada. ▮

WINDOWS 95 SUPPORT SERVICES: Helping You Manage Change

The soon-to-be-released Microsoft® Windows™ 95 operating system promises exciting new capabilities for support organizations and PC users alike: faster processing, simplified workgroup computing, powerful multitasking, easy Internet access, higher reliability, lower support costs, "plug and play" integration—to name just a few. But the move to Windows 95 represents a major transition, with challenges that may be as great as the potential paybacks. It's a move that's likely to mean quantum changes for your end-users, your technology environment, and your support programs and resources.

You'll want to carefully evaluate the cost and impact of migration right up front. You'll want to understand exactly what your critical success factors will be. And you'll want to retain tight control over this potentially disruptive transition from start to finish. Digital offers a full portfolio of services to help you manage all the key phases of the migration process. Designed to complement your in-house capabilities, Digital's **Windows 95 migration services can help you get a handle on your desktop environment, shorten your time-to-results, and maximize the return on your desktop investments.**

Your technology migration partner

Deb Nicholls, Technology Migration Services Manager for Multivendor Customer Services, notes that Digital is uniquely qualified to provide Windows 95 migration support. "We've worked side-by-side with Microsoft for over a decade in areas like application development, engineering, and systems integration. We offer a full array of Microsoft support capabilities around the globe. And we're the world's largest supplier of Microsoft training.

"Most important, our technical support people have been using and testing Windows 95 intensively over the past 3 months, and will continue to evaluate and test each new release," Nicholls says. "They understand the issues and complexities. They can offer informed, objective advice on whether migration makes sense for you. Then, if you decide to go ahead, they can provide the precise kind and level of help you need."

Whatever it takes.

"Digital can program-manage your entire effort. Or we can engage at any point you choose, acting as an extension of your internal resources to help ensure a smooth, successful migration," Nicholls says.

Digital's technology migration specialists can work with you to…

- Assess the impact of Windows 95 migration on your organization
- Define hardware, software, and network requirements
- Develop a sound migration strategy and a solid implementation plan
- Contain acquisition and ownership costs for desktop hardware and software
- Simplify software asset management
- Get new and upgraded equipment up-and-running quickly
- Reconfigure your network
- Train technical staff and end-users
- Provide customized help desk support
- Manage and maintain your desktop environment

For more information on Windows 95 services, call us at 1-800-888-4234 ext. 95. ▮

Did you know…

…that Digital Learning Services is a Microsoft Authorized Technical Education Center? Since its 1992 introduction, Microsoft solutions are the fastest growing training products in our Open Learning Solution offerings. Digital Learning Services support Microsoft's Certified Professional Program with certification for System Engineers, Solution Developers, Product Specialists, Support Professionals and End User Application training. With more than 40 Microsoft lecture lab, seminar, self-paced and multimedia solutions, you're sure to find the Microsoft training you need. If not, we can customize a training solution to meet your special needs. For training information or a subscription to the Digest, call Digital Learning Services toll free 1-800-332-5656. ▮

Saturn Announces Quality Award

Saturn Corporation of Spring Hill, Tennesse announced March 29,1995 that Digital Equipment is a winner Quality Recognition Award. Specifically, Saturn recognized Digital's Multiven for computer systems and PC maintenance on Saturn's auto manufacturing suppliers that met Saturn's stringent criteria for quality.

In a recognition ceremony at Saturn's manufacturing and assembly co "Skip" LeFauve said, "I congratulate each of these suppliers on their commitn nization's performance. As our industry changes so must our suppliers." H exceeding our customers' expectations. These suppliers have what it takes t

Windows 95 Assessment Services

On-site technical consulting for:

- Impacts and requirements analysis
- Network assessment
- Migration planning
- Compatibility testing
- User & technical support readiness
- Physical inventory, if required
- Recommended tools

Windows 95 Migration Services

- Project management
- Hardware and software upgrades
- Installation and staging
- Network design & installation
- Technical training
- Technical consulting
- PC and software asset management

Windows 95 Support Services

- PC maintenance
- Enterprise help desk
- Network integration and management
- User training ▮

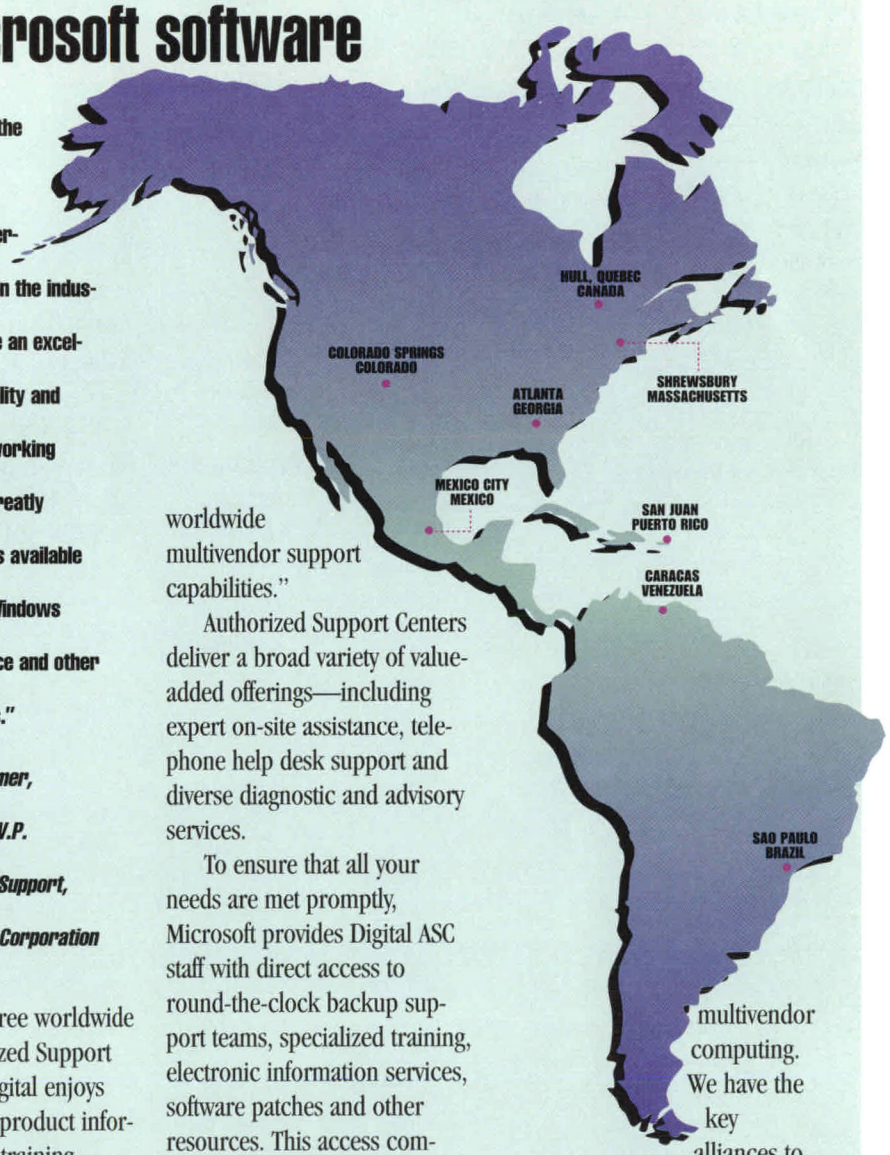
e,
of Saturn's 1994
dor Customer Service Organization
plant floor. This award was given to

mplex, Saturn President Richard G.
nent to Saturn and to their own orga-
le added, "At Saturn, we talk about
perform to that level for Saturn." ▮

Digital: Your Authorized Support Center for Microsoft software

"Digital has one of the largest worldwide maintenance and service organizations in the industry. They also have an excellent record for quality and dependability. By working together, we can greatly extend the services available for customers of Windows NT™, Microsoft Office and other Microsoft products."

— Steve Ballmer, Executive V.P. Sales and Support, Microsoft Corporation



As one of only three worldwide Microsoft Authorized Support Centers (ASC), Digital enjoys priority access to product information, technical training, backup support expertise, and other Microsoft resources. Thus Digital can help you make the most of your Microsoft solutions.

Randy Herald, Alliance Marketing Manager, points out that "Digital meets all the stringent service competency, quality, and customer satisfaction standards required of an ASC. These include a large number of Microsoft-Certified Professionals, a documented quality-assurance program, and worldwide multivendor support capabilities."

Authorized Support Centers deliver a broad variety of value-added offerings—including expert on-site assistance, telephone help desk support and diverse diagnostic and advisory services.

To ensure that all your needs are met promptly, Microsoft provides Digital ASC staff with direct access to round-the-clock backup support teams, specialized training, electronic information services, software patches and other resources. This access combined with a formal escalation process allows Digital service personnel to call on Microsoft engineering support directly, if required, to meet your user needs.

Digital knows how to make your hardware, software and networking components work together so you can enjoy the best possible return on your entire IT investment. We provide a single point of accountability to help your system manager, developer and end user all realize the full potential of multivendor computing. We have the key alliances to ensure that you receive a consistently high level of service for your mission-critical applications. Digital support for Microsoft products is available on all major hardware and software platforms, delivered through 23 locations worldwide.

Would you like a copy of *Digital Support for Microsoft Products* brochure? Simply use the feedback form on page 11 or call 1-800-888-4234 ext. 67. ▮

Answers not excuses for Adra Systems Inc.

Adra Systems Inc. is a world-recognized leader in providing innovative mechanical design and information management solutions. Initially, they developed their unique software on Digital workstations. Today, although they work with multiple vendor platforms, they use Digital to provide multivendor hardware support. Why? According to Adra's Systems and Network Manager, Paul Cammuso, it's because of some very special Digital people, Andrea Sheehan and John Anderson. Cammuso expresses great confidence in their understanding of Adra's business needs and in their ability to fulfill those needs.

Andrea Sheehan

Two years ago when Adra was re-evaluating hardware and service, BASE representative Sheehan presented a comprehensive package that fit Adra's contract needs and ensured service beyond their requirements. According to Cammuso, Andrea Sheehan is a rare individual who goes beyond her services sales role and provides ready answers to any Digital question. One call advising her of a problem and "somehow she always gets the help I need." It's her responsiveness, her customer orientation, repeatedly demonstrated, that convinces Cammuso that MCS really does give Answers not excuses.

John Anderson

In addition to Sheehan's helpfulness is the consistently excellent technical support Adra has received over the last four years from service representative John Anderson. Observing Anderson's expertise in action, Cammuso states: "His goal when he arrives is to satisfy me, the customer, and he will not leave until I am satisfied...he knows that our uptime is important and will schedule us accordingly to minimize impact to our users. To facilitate a software support answer for me, John calls the CSC directly and prioritizes the call so I can get the response fast."

It's people like Sheehan and Anderson that convinced Adra to trust Digital with support for other vendors' hardware as it joined their Digital hardware. They've been pleased with the Digital support they've received for other vendors' equipment too. They like dealing with a single point of contact—one call to do it all. With Andrea and John servicing them, Cammuso sums up, **"Digital's multivendor hardware service department will be Adra's choice and recommendation to others for many years to come."** ■

Brazil customers tell why they like DSNlink.

Nelson Nogueira Filho, Technical Support Specialist, for Albert Einstein Hospital in Brazil shares how he uses DSNlink to help in his job. "Using DSNlink on open service calls makes it easier to explain the problem and to share follow-up information. The ability to receive patches is an excellent feature. I have been using DSNlink for a year and have had no connection problems."

Zeina Pechir, Technical Support Specialist for EMBRATEL, a Brazilian Telecommunications Company, likes having access to the solution data bases. According to Zeina, "DSNlink gives us more independence. We can solve problems at anytime. The flexibility of access it provides is also very important. Recently we relocated systems. It was very helpful to have access to the solution data base during off hours." Zeina says she would recommend using DSNlink to others. "It will reduce the number of open calls for your company."

DSNlink is available to any Digital Service customer with a warranty or service agreement that includes telephone support for hardware and/or software. If you are not using it now, try it! For more information in the U.S., call 1-800-354-9000, in Canada call 1-800-267-5251 and ask for the DSNlink Support Team. ■

DIRECT ORDERING FROM DIGITAL IS EASY.

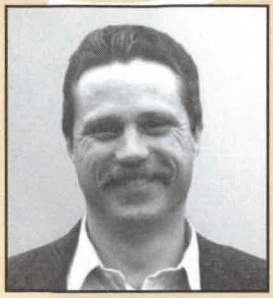
BY PHONE: 1-800 DIGITAL from 8:30 a.m. to 8:00 p.m. EDT

FAX: **DECdirect:** 1-800-234-2298
PC FAX Ordering: 1-800-524-5694
Canada: 1-613-592-1946

ELECTRONICALLY: 1-800-234-1998 from 7:00 a.m. to 12:00 midnight EDT (US only)

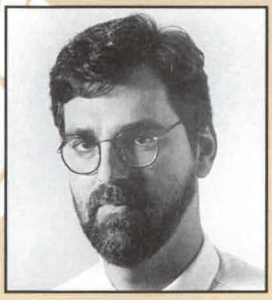
PC InstaFACTS: 1-800-388-3228 (US only)

THINK CUSTOMER

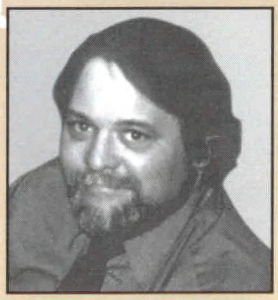


BILL SWANSON, Cincinnati, OH, recently joined 3,165 "Project Management Professionals" worldwide by completing a multi-year training program certification. He's using these project management skills to provide top quality support for such accounts as Champion Int'l, Borden and Cincinnati Public Schools.

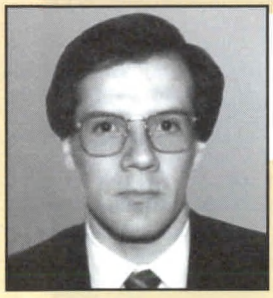
NATALIE MARTEL, Hull, QU, Canada, is a Customer Support Centre team leader for customized help desk services delivered to Canadian customers including Glaxo Canada Inc. Her team's success—achieving more than 70% of calls direct to specialist—has Natalie consulting with other customers to set up specialized help desk contracts.



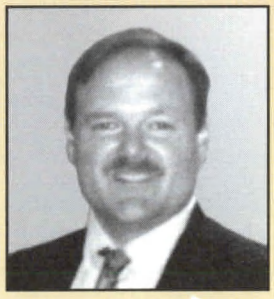
MAURICIO VELASCO, Rio de Janeiro, Brazil, is a system support engineer with expertise ranging from the PDP11™ up to the newest Alpha™ platform and operating systems. Recently his expertise was praised beyond Brazil's borders by the PepsiCo distributor in Caracas, Venezuela.



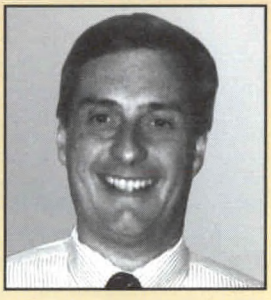
AL THORPE, Philadelphia, PA, functions as a Call Screener to assist customers logging calls. His engineering expertise helps him pinpoint the problem and provide quick resolution. Closing numerous calls on the phone, Al helps ensure maximum system availability. His documented processes help peers in the same role be equally successful.



JESUS ESQUIVEL, Mexico City, Mexico, brings telecommunications expertise to the new MCS Network Services team. His broad experience helps our customers in multivendor hardware and software environments design and structure their networks.



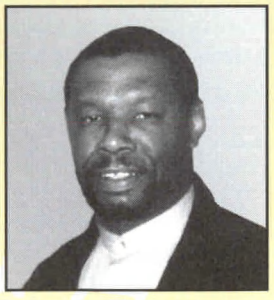
JOHN FAULKNER, Rocky Hill, CT, is described by customer, Yale University, as one of the main reasons for renewing their Digital service contract. They're delighted to benefit from Faulkner's 15 years of creative solutions, tenacity and team leadership.



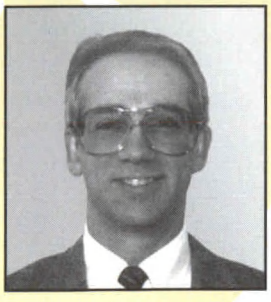
MARK MORRIS, Columbus, OH, was key to a recent successful DECmux™ expansion for ARC Industries. MIS Director Richard Grawemeyer stated that Morris "has gone out of his way to facilitate our service needs."

KEVIN LIVIGNI, Colorado Springs, CO, was recently recognized by Digital Channels District for his assistance with partner accounts, Wyle/StorageTek and Avnet/CSOH. He displays "commitment and tenacity to get the job done, whatever it takes."

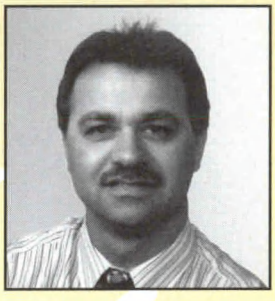
DENNIS BIRNBECK, Fairfax, VA, delivers excellent service. He won a Digital VAR's commendation by displaying an outstanding work ethic and positive attitude. Once recently, when he was out of pager range, he rushed to get a spares kit and drive, and arrived ahead of his 2-hour response commitment by 1 minute!



REGGIE CROSS, Fairfax, VA, fixes the customer as well as the equipment. One customer wrote that he worked early and late and "even on Saturday in order to create a minimum of disruption to my business... his professionalism, and attention to detail provided a welcome ray of sunshine at an otherwise dismal time."



JIM SANDERS, Buffalo, NY, provides call screening, parts location and next day service delivery scheduling for customers and peer engineers. Customers are pleased with the resulting prompt call backs and accurate expectation setting that result from Sanders' expertise and commitment.



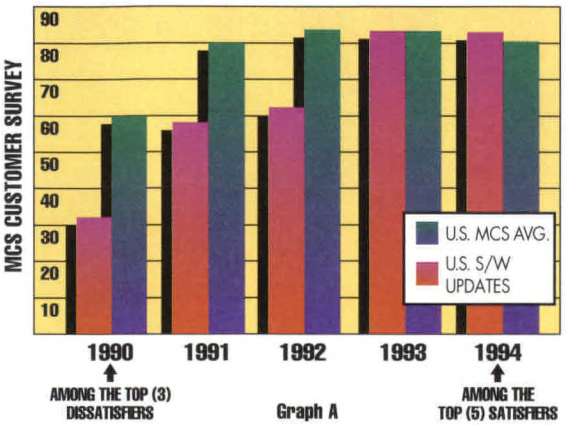
TONY FABBRO, Vancouver, BC, Canada, is the primary service contact for Pacific Press which publishes both Vancouver newspapers. Tony's 10 years service has helped ensure that Pacific Press has never missed a paper, due to a Digital systems failure. The customer's confidence in Tony has led to Digital handling the Sun workstations and an Apple warranty agreement.

Quality improvements follow your feedback: Software Distribution

It's been a long journey from first analysis five years ago when your feedback—Software Service Survey scores and comments from Customer Forums—indicated improvement efforts were needed with Digital's Software Update Service. You told us that you were not getting your updates, your names and addresses were incorrect and your contracts were not being renewed on time. Our first attempt to address your concerns was to increase exception orders: to come back to you with a manual software update order entered after the initial update shipment was completed. It was a band-aid—time-consuming, duplicate effort—and it didn't fix the problem long-term.

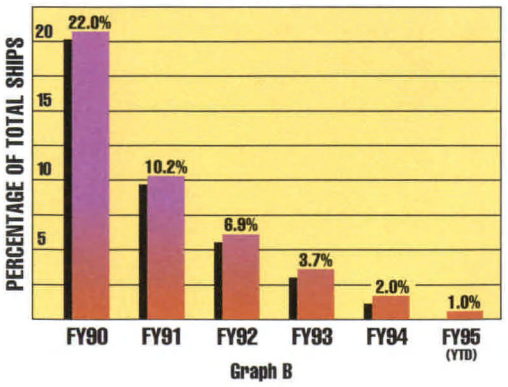
Recognizing the need to engage in continued and systemic quality improvements, Digital invested in people as the next step. MCS personnel from Software Product Services and the U.S. Software Supply Business gathered to charter the Software Distribution Improvement Team to review the data and prioritize the work required to resolve customer concerns around software update delivery. To ensure consideration of all aspects of the process, the team solicited membership from many Digital functions: Software Services, Logistics, Administrative Support, Field Administrators, and Customer Support Centers. The chosen committed individuals involved their organizations in the implementation of team recommendations. Today your initial concerns are resolved. However, the team is still in place to continually improve the software distribution process for you.

Customers View Software Update Service



Graph A

Exception Order Trend Chart



Graph B

What did they do? The team identified two key improvement areas:

1) Streamlining of Order Feed Systems
2) Delivery Simplification

To streamline order feed systems the team mapped out the entire order flow from start to finish. In this process they developed an overnight feed to manufacturing that replaced a weekly batch method. They also developed a way to identify problem orders before shipping. This virtually eliminated the need for exception orders. The result— see Graph B—is exception order reduction from 22% to less than 1% in a five-year period.

The Delivery Simplification involved quality improvement processes for paperwork, packaging, and data accuracy. One improvement was the inclusion of the your purchase order number on the Product Delivery Document. This made it easier to deliver within your environment. The team put processes in place to resolve product delivery problems resulting from incorrect customer data. To address missing and/or lost updates, the team instituted door-to-door tracking on all our carrier contracts. In addition they initiated an option that allows you to schedule the delivery of your software updates up to four times a year. You can receive your updates at your convenience.

The results of such process re-engineering efforts as measured by Digital's customer survey data—see Graph A—show significant improvement in the way you view the software update service. Thanks for your feedback. These improvements all started with you! ▮

INFOSHARE

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